AMENDMENTS

AMENDMENT TO THE CLAIMS

Please amend the claim as follows:

1. (Original) A spin-valve sensor disposed between gap layers, comprising:

an antiferromagnetic pinning layer;

a pinned layer disposed to one side of the antiferromagnetic pinning layer;

a sensing layer;

a spacer layer disposed between the pinned layer and the sensing layer; and

a gap layer disposed to one side of the antiferromagnetic pinning layer, the gap layer comprising a plurality of oxidized metallic films.

2. (Original) The spin-valve sensor of claim 1, wherein the gap layer comprises a first gap layer disposed to one side of the antiferromagnetic pinning layer and further comprising a second gap layer disposed to one side of the sensing layer; the first and second gap layers comprising a plurality of oxidized metallic films.

3. (Original) The spin-valve sensor of claim 1, wherein the gap layer is formed of a plurality of *in-situ* oxidized metallic films.

4. (Original) The spin-valve sensor of claim 2, wherein at least one of the first gap layer and the second gap layer is formed of an *in*-situ oxidized metallic film.

5. (Original) The spin-valve sensor of claim 2, wherein the first gap layer and the second gap layer are each formed of a plurality of *in-situ* oxidized metallic films.

6. (Original) The spin-valve sensor of claim 2, wherein the first gap layer and the second gap layer are each formed of a plurality of *in-situ* oxidized Al metallic films.

7. (Previously Amended) The spin-valve sensor of claim 2, wherein the plurality of oxidized metallic films has a cumulative thickness in a range of between about 50 Å and about 200 Å.

8. (Currently Amended) The spin-valve sensor of claim 2, wherein the plurality of oxidized metallic films has a cumulative thickness in a range of between about 75~~50~~ Å and about 150~~200~~ Å.

9. (Original): The spin-valve sensor of claim 2, wherein each of the plurality of films has a cumulative thickness of about 100 Å.

10. (Previously Amended) The spin-valve sensor of claim 1, further comprising a plurality of seed layers disposed to one side of the antiferromagnetic pinning layer; the seed layers comprising an Al_2O_3 film, a Ni-Cr-Fe film and a Ni-Fe film; the antiferromagnetic pinning layer formed of a Pt-Mn film; the pinned layers formed of a Co-Fe film, Ru film, and a Co-Fe film; the spacer layer formed of an oxygen-doped, *in-situ* oxidized Cu film; the sensing layer

formed of a Co-Fe film and a Ni-Fe film, and a cap layer formed of an *in-situ* oxidized metallic film.

11. (Original) The spin-valve sensor of claim 10, further comprising a partially oxidized cap layer adjacent to the sensing layer.

12. (Previously Amended) A disk drive system comprising:

a magnetic recording disk;

a spin-valve sensor for reading data recorded on the magnetic recording disk, the spin-valve sensor comprising:

an antiferromagnetic pinning layer;

pinned layers formed disposed to one side of the antiferromagnetic pinning layer, the magnetizations of the pinned layers substantially fixed by the antiferromagnetic pinning layer;

a sensing layer formed of ferromagnetic films adjacent to the pinned layers, the sensing layers configured to have an electrical resistance that changes in response to changes in magnetic flux through the sensing layer;

a cap layer disposed to one side of the sensing layers, the cap layer formed of a partially *in-situ* oxidized metallic film having a thickness in a range of between about 5 and about 15 Å;

a first gap layer disposed to one side of the antiferromagnetic pinning layer, the first gap layer comprising a plurality of oxidized metallic films;

a second gap layer disposed to one side of the cap layer, the second gap layer comprising a plurality of oxidized metallic films;

an actuator for moving a read/write head comprising the spin-valve sensor across the magnetic recording disk in order for the spin-valve sensor to access different magnetically recorded data on the magnetic recording disk; and

a detector electrically coupled to the spin-valve sensor and configured to detect changes in resistance of the spin-valve sensor caused by rotation of the magnetization of the sensing layers relative to the fixed magnetizations of the pinned layers in response to changing magnetic fields induced by the magnetically recorded data.